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ABSTRACT

Societal changes have caused new directions for research on interest measurement. Specifically, the woman's movement of the early 1970s with the resultant awareness of sex inequities in the U.S. occupational distribution, has encouraged changes in gender-free occupational titles and equal endorsements by sex within scales of item pools and revised interest inventories. Changes in career counseling reflected by recently developed or revised inventories place an increased emphasis on self-exploration and on expansion of career options with a concern for the sex-fairness of inventories. If interest inventories are to do more than merely confirm existing self-concepts or ideas about occupations, their use must be combined with enlightened counseling and a long-range, well-planned, in-depth intervention plan. Controversies must be resolved regarding psychometric changes, separate vs. combined sex norms, and the question of predictive validity of interest inventories. (Author/PN)

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Current Problems and Research Needs in Interest Measurement[1]

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Running Head: Interest Measurement

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Abstract

A marked change has taken place in interest measurement during the last decade, and the change has given rise to controversial points of view and to an awareness of new directions that research on interest measurement must take. The change is a direct outgrowth of the women's movement and the growing awareness of pronounced sex inequities in the U.S. occupational distribution. Interest inventories could be viewed as either a tool to help maintain the status quo or as a catalytic agent that could open up a wider spectrum of options--traditional and non-traditional--to both women and men. Resulting controversies regarding psychometric changes, separate vs. combined sex norms, and the question of predictive validity have pinpointed the need for new research directions and new criteria for judging the effectiveness of interest measurement.

Current Problems and Research Needs in Interest Measurement

Esther E. Diamond

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A little over sixty years ago, in 1921, the first interest inventory--the Carnegie Interest Inventory--was published in the United States. Eventually, the Strong and Kuder inventories made their appearance and dominated the field. More recently, numerous other interest inventories have come into use. Today, approximately three and a half million interest inventories are administered annually (Tittle & Zytowski, 1978).

Interest inventories can, as Tyler (1978) stated, show the shape of a person's patterns of choices and rejections and serve as structures through which possibilities can be screened and processed. In the past, however, interest inventories often served inadvertently as a tool to help maintain the traditional occupational distribution of men and women. Only recently has the role of interest inventories been perceived as that of a catalytic agent that can help men and women consider a wider spectrum of occupations, both traditional and nontraditional, and hopefully change the occupational distribution, which remains virtually the same today as it was half a century ago.

Recent Changes in Interest Inventories

The women's movement of the early 1970s led to the establishment of the NIE Guidelines for Assessment of Sex Bias and Sex Fairness in Career Interest Inventories (Diamond, 1975), and to changes in some of the most commonly used interest inventories. For example, the pink (for women)

and blue (for men) forms of one inventory were combined into a single form with a single item pool. At least two empirically developed inventories began reporting scores on all scales to both sexes, regardless of norm group on which the scales were developed. Occupational titles were made gender-free in most inventories. Attempts were begun to build item pools that would have equal endorsements by sex within scales. Both the Strong-Campbell Interest Inventory (SCII) and the Kuder Occupational Interest Survey (KOIS) expanded the number of available scales in an attempt to lessen the disparity between number and types of scales normed on each sex.

Anastasi (1982) describes three major changes in career counseling reflected by the more recently developed or revised inventories as: 1) increasing emphasis on self-exploration; 2) increasing emphasis on expansion of career options; and 3) concern for sex-fairness of interest inventories. It is mostly within this framework that current problems and research needs in interest measurement will be discussed.

Current Concerns

Pressures for changes in interest measurement have given rise to a number of controversial questions that can be roughly categorized as primarily psychometric concerns (e.g., types of scores, methods of scale development, norms) or primarily theoretical-social concerns (e.g., rationale, interpretation and use, and long-range effects). Both types of concerns are closely related; the one impinges on the other.

Raw Scores vs. Sex-normed Scores

Hanson, Noeth, and Prediger (1978) looked at four ways of reporting interest

inventory scores on homogeneously constructed scales in a longitudinal study--raw scores, and scores on combined-sex, same-sex, and opposite-sex norms. Criterion-related validity for same-sex norms was as high as or higher than any of the other procedures. Gottfredson and Holland (1978) summarized research defending the use of raw scores on the Self-Directed Search (SDS), as opposed to scores based on same-sex norms. They re-calculated the hit rates for Hanson, Noeth, and Prediger's data, using overall hit rates that took group size into account, and obtained a hit rate of 61 for raw scores and 48 for same-sex standard scores. This controversy has not yet been put to rest.

Same-sex, Opposite-sex, and Combined-sex Norms

This concern stems from the fact that response rates for items in almost all inventories differ for males and females. The problem is not identical for empirically developed occupational scales, such as those in the SCII and the KOIS, and for homogeneous, internally constructed scales such as the Kuder Preference Record--Vocational and the Kuder General Interest Survey, and the SDS and the ACT Interest Inventory. For homogeneous scales, as Prediger (1976) and others have found, both combined-sex norms and opposite-sex norms produce profiles that are widely divergent for males and females, while same-sex norms show comparisons with members of one's own sex, who have been subjected to similar socialization experiences. The NIE Guidelines advocate scoring all inventories on both sets of norms (if scales have been justifiably developed separately by sex), so that respondents can see appropriate comparisons with both sexes and take these into consideration in educational and career exploration.

Attempts to use combined sex norms with empirical scales work for some occupations, but not for others. For example, Hansen (1976) and Webber and Harmon (1978) experimented with same-sex scales with "biased" items (those that differentiated between the sexes) deleted and with these same items retained, and with combined-sex scales with biased items deleted and with biased items retained. None of the four methods was clearly superior in predicting across sexes or occupations. Campbell and Hansen (1981), reviewing the studies and some additional applications of their own, concluded that attempts to develop combined-sex scales appear to be premature, and that same-sex scales with biased items retained work best.

Reporting scores on opposite-sex normed occupational scales--particularly when an occupation has been normed on only one sex--seems to be relatively problem-free when the scale is based only on the responses of the criterion group, as in the KOIS. However, when response differences between a criterion group and a male or female in-general group are used in scale construction, as in the SCII, scores on other-sex norms tend to be inflated on traditional occupations for one's own sex and depressed on occupations that are nontraditional for one's own sex (Johnson, 1978). Laime and Zytowski (1964) obtained similar findings. The fact that members of one sex generally respond differently from the in-general group of the opposite sex makes use of other-sex norms inadvisable with the SCII (Campbell & Hansen, 1981). Where this problem does not exist, however, scores on opposite-sex-normed scales can be ranked separately, and high scores may suggest ~~combinations~~ occupations that might not have surfaced otherwise.

Sex-Balanced Scales

Hanson and Rayman (1976) and Lunneborg (1980) attempted to develop item pools for the ACT Interest Inventory (ACT II) and the Vocational Interest Inventory, respectively, that elicited similar response rates from females and males, or--when this could not be accomplished--would balance items favored by each sex within scales. Five of the six sex-balanced ACT II scales showed more than 90 percent overlap for males and females. However, Lunneborg found that, despite the careful item selection based on approximately equal proportions of the sexes endorsing the items, women generally preferred the Service and Artistic areas and men the Technical, Outdoor, and Scientific areas. The biggest challenge, Lunneborg concluded, was women's attraction to People and aversion to Things. Lunneborg also stated her intention to rewrite and modify items to not only reduce their correlations with sex to zero, but also to keep these correlations balanced within each scale.

Betz and Wolfe (1981) compared college women's scores on the SCII with scores on the unisex edition of the Act Interest Inventory for criterion-related validity and degree of sex balance. They found that, regardless of the type of scoring procedure used, women whose choices were in the Realistic area seemed unlikely to obtain a corresponding Holland code, and occupations in the Realistic area would be less often suggested to women clients than occupations representing other Holland themes.

Matthews and Walsh (1981) found high-point Social codes on the SDS for non-degreed working women who had held jobs in Realistic, Investigative, Enterprising, and Conventional, as well as Social, occupations for three to eleven years.

Betz and Wolfe (1981) surmised that women choosing traditionally "female" fields may be basing their choices on perceived appropriateness rather than on the basis of their own interests and capabilities, whereas women choosing traditionally "male" fields may have resisted socialization pressures. They advised against interpreting low Realistic scores as necessarily contraindicative of Realistic occupations.

Predictive vs. Exploration Validity

Cole and Hanson (1975) described the two principal rationales that have been used to relate interest measurement to the criterion of job satisfaction--the people-similarity rationale, which links satisfaction to degree of similarity between an individual's likes and dislikes and those of people in a given occupation, and the activity-similarity rationale, which links satisfaction to the degree of preference for activities similar to those required in an occupation. The people-similarity rationale relies heavily on a stable socialization process closely tied to the past; when the future follows a new direction, the empiricism of interest measurement impedes the path of constructive change. On the other hand, differences in the socialization of males and females raises questions about the activity-similarity rationale. The authors question whether the socialization process for girls predicts their job satisfaction as well as the socialization process for boys predicts theirs.

The concept of "exploration validity" has been raised by Tittle (1978) and others. That is, to what extent does an interest inventory stimulate the

client to explore options that might not otherwise be explored? To what extent are options broadened to include not only more occupations but more kinds of occupations?

Effects of Interest Inventories

This concern is closely related to concerns about predictive and "exploration" validity. Studies of effects have been summarized by Tittle (1978) and by Diamond (1981). In general, the effects of interest inventories on client career perceptions and exploration behavior have been small and statistically insignificant, although there have been some impressive exceptions. For example, Siebel and Walsh (1977) found that modified SDS instruction, which permitted clients to express preferences for activities to which they had had little or no exposure, resulted in significantly higher scores on certain subscales. Females tended to give an increased number of positive responses on scales traditionally masculine (Realistic, Invetigative, and Enterprising), and males on scales traditionally feminine (Artistic, Social, and Conventional).

Wilson and Daniel (1981) used a combination of measures, including the Kuder General Interest Survey, Form E, in a middle school workshop on career options. Pre-post differences on a stereotype survey were highly significant for the experimental group but not for the control group. The experimental group seemed more aware of events in their everyday environment in which people had preconceptions about male and female roles.

For the most part, the impact of interest inventories has been difficult to measure. Many variables were involved, most of them difficult to

isolate or control--e.g., influence of parents, schools, media, and even counselors. It appears that if we expect interest inventories to do more than merely confirm existing self-concepts or ideas about occupations, we need to combine their use with enlightened counseling and a long-range, well-planned, in-depth intervention program.

Suggested Research

In the light of the concerns and problems described, what are some of the research priorities?

- Further study is needed on the use of same-sex, conbined sex, and opposite-sex norms, for both general interest (homogeneous) scales and occupational scales.
- More information is needed on actual changes in response rates over time for items in sex-balanced scales as well as items in inventories where sex balance has not been achieved. Information should be obtained by sex, age, and different levels of the worker population (e.g., professional, clerical, skilled trades, and so on) as well as different major fields (e.g., scientific, technical, social, artistic, and so on).
- Research is also needed to determine which differences in response rates between women and men are based on general female-male role differences and which are clearly related to what one does in a particular occupation. For example, in the past, skilled trades workers, who were primarily male, endorsed many items that appeared to be related more to their preference for the company and activities of males than to their preference for the job activities they performed. To what extent do female skilled trades workers today endorse the same inventory items?

- With reference to sex balance of item endorsements within scales, research is needed to determine whether removal of items of established validity favored by one sex and substitution of an item favored by the other sex or equally endorsed by both might make the inventory less valid. Researchers should consider the fact that the valid item is only one sample of a given behavior for which there should be a universe of possible samples, at least some of which could meet the requirements of both validity and sex balance.
- Research is needed on the implications of equal endorsement of items in homogeneous scales by males and females in a general norm group of students or adults. What happens when these items are administered to males and females in the same occupation? Are endorsement rates maintained?
- As suggested by Cole and Hanson (1975), research is needed to determine whether the socialization process for females predicts their job satisfaction as well as the socialization process for males predicts theirs.
- Finally, studies are needed of the long-range effects of sex-fair interest measurement embedded in a well-planned, well-integrated intervention proram, with control and analysis of the multiple variables that influence career decision-making. Consideration should also be given to the need for expansion of outcome criteria, as suggested by Tittle (1981), to include examination of other adult roles and developmental tasks as contributing factors to career decisions, particularly those of women.

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